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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/616,457	07/14/2000	Xiao Chen	99-464	6786

719 7590 03/26/2004

CATERPILLAR INC.  
100 N.E. ADAMS STREET  
PATENT DEPT.  
PEORIA, IL 616296490

EXAMINER

RAO, SHEELA S

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 03/26/2004

2

Please find below and/or attached an Office communication concerning this application or proceeding.

8

## Office Action Summary

Application No.

09/616,457

Applicant(s)

CHEN ET AL.

Examiner

Sheela Rao

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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**DETAILED ACTION**

1. Claims 1-16 are presented for examination.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka, et al. (USPN 6,061,640).

The Tanaka reference discloses a method for extracting abnormal factors in a processing operation. The method collects data based on product quality and informational data that adversely affect the product quality. The adverse factor data includes apparatus history, manufacturing conditions, and measurement data. The extraction of such data helps with the analysis of the operational process. The analysis of factors is made at several stages, i.e. past – present- future, to enable the tracking of adverse affects or conditions on material in the operational process. The method of tracking fatigue as taught by the prior art is similar to that of which is claimed by instant claims 1, 8, and 13.

The reference of prior art to Tanaka does not teach or disclose the use of the appraising methodology within a thermal process or a thermal cutting process or a welding process, as per claims 2-7, 9-12, and 14-16, respectively. As for the use of the method for tracking abnormalities in the particular manufacturing processes, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied the method of Tanaka in any manufacturing environment. Once the method is applied, the parameters being tracked would solely be dependent upon the environment used thereon. Thereby, yielding pertinent results for each process.

For the reasons stated above, the limitations of the claimed invention (claims 1-16) is taught by the prior art of record; thereby, rendering the instant claims unpatentable.

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**Request for Information under 37 C.F.R. §1.105**

4. Applicants and the assignee (presently recorded as Caterpillar, Inc.) are required under 37 C.F.R. § 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

The information is required to establish the level of ordinary skill at the time of the invention (see *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966)), particularly with regard to the claimed subject matter of establishing a method for providing a process model for a material in a manufacturing process, wherein stress and distortion information is obtained.

The information is additionally required to complete the background description in the disclosure by documenting the particulars of the recited known methodologies described at page 2, beginning at line 6 through line 7 of page 3 of the specification.

In response to this requirement, please provide a copy of any non-patent literature, published application, or patent (U.S., or foreign), by any of the inventors that relate to the items noted above.

In response to this requirement, please provide a copy of any non-patent literature, published application or patent (U.S., or foreign) that was used to draft the application.

In response to this requirement, please provide a copy of any non-patent literature, published application or patent (U.S., or foreign) that was used in the inventing process, such as designing around or providing a solution to accomplish an invention result.

In response to this requirement, please provide the names of any products or services representative of the recited known methodologies described at pages 2 and 3 as noted above.

In responding to those requirements that require copies of documents, where the document is a bound text or a single article over 50 pages, the requirement may be met by providing copies of those pages that provide the particular subject matter indicated in the requirement, or where such subject matter was not indicated, the subject matter found in applicants' disclosure.

The fee and certification requirements of 37 C.F.R. § 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 C.F.R. § 1.105 that are included in the applicants' first complete communication responding to this requirement. Any information disclosures beyond the scope of this requirement under 37 C.F.R. § 1.105 are subject to the fee and certification requirements of 37 C.F.R. § 1.97.

Applicants are reminded that the reply to this requirement must be made with candor and good faith under 37 C.F.R. § 1.56. Where applicants do not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete response to the requirement for that item.

This requirement is an attachment of the enclosed Office action. A complete response to the enclosed Office action must include a complete response to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action, which is 3 months.

NP

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**Conclusion**

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wei, et al.      USPN 5,229,948  
discloses a method of optimizing a multi-stage manufacturing  
system using sensitivity data results from a simulated model

Harper, et al.      USPN 4,636,634  
discloses an automated tracking system that identifies and  
allows for progress in a manufacturing environment.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela Rao whose telephone number is (703) 305-9766. The examiner can normally be reached Tuesday - Thursday from 9:00 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard, can be reached on (703) 308-0538.

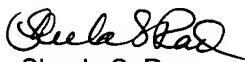
Any response to this action should be mailed to:

**Commissioner of Patents and Trademarks  
Washington, D.C. 20231**

or faxed to:  
**(703) 872-9306 for Official Communications**

hand-delivered responses should be brought to:  
**Receptionist - Sixth Floor  
Crystal Park II, 2121 Crystal Drive, Arlington, Virginia**

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

  
Sheela S. Rao  
March 16, 2004



**LEO PICARD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100**